PACIFIC UNDERGRADUATE RESEARCH AND CREATIVITY CONFERENCE

Title: The Effects of Water Quality on Tadpole Development

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Abstract

Water quality is an important factor in the growth of tadpoles. In order to test the relevance of water volume, we varied the amount of water available for developing frog larvae. We prepared five tanks, each containing six broods, with ten tadpoles per brood. Broods in two of the tanks were contained in non-permeable acrylic boxes that prevented any water exchange with the surrounding water. Broods in the other three tanks were contained in mesh baskets and shared the same water. The water was oxygenated with air stones in the acrylic tanks and with a single cascade water filter in each tank with baskets. After the daily tank cleaning, pictures were taken of each brood. Additionally, when the tadpoles metamorphosed, they were euthanized, preserved and photographed. Tadpoles in the acrylic boxes grew at a faster rate and reached metamorphosis earlier than tadpoles in mesh baskets. The results may have been compromised, however, by experimental errors. The snout to vent length (SVL) of the tadpoles in the baskets was greatly reduced in comparison to identical treatments in past experiments. This experiment should be repeated before the differences between boxes and basket can be evaluated with confidence. The development of the tadpoles in the boxes was, however, comparable in SVL and rate to that of tadpoles raised in larger water volumes in previous experiments. This indicates that the small water volume in the 750 ml box is not a limiting factor for the larval development of the Túngara frog.